

**NOTE: Incorporates document changes effective
July 23, 2003**

Changes are highlighted
see last page for a summary of changes

[INCH-POUND]
A-A-3109
June 15, 1998
SUPERSEDING
L-F-560G
November 17, 1995

COMMERCIAL ITEM DESCRIPTION

FORK, KNIFE, AND SPOON, PICNIC (PLASTIC)

The General Services Administration has authorized
the use of this commercial item description for all
Federal agencies.

1. SCOPE

1.1 Scope. This commercial item description (cid) covers disposable plastic flatware.

2. CLASSIFICATION

2.1 Classification. The plastic flatware shall be of the following types and items, as specified.

Type III - Heavy duty

- Item 4 - Flatware set, consisting of one fork, knife and spoon (white)
- Item 5 - Fork, picnic (white)
- Item 5a - Fork, picnic (green)
- Item 5b - Fork picnic (tan/sand)
- Item 6 - Knife, picnic (white)
- Item 6a - Knife, picnic (green)
- Item 6b - Knife, picnic (tan/sand)
- Item 7 - Spoon, tea, picnic (white)
- Item 7a - Spoon, tea, picnic (green)
- Item 7b - Spoon, tea, picnic (tan/sand)
- Item 8 - Spoon, bouillon, picnic (white)

Type IV - High impact

- Item 9 - Spoon, picnic (tan/sand)
- Item 10 - Knife, picnic (tan/sand)
- Item 11 - Fork, picnic (tan/sand)
- Item 12 - Flatware set, consisting of one fork, knife, and spoon (tan/sand)
- Item 13 - Spoon, MRE, 7-inch (brown)

Type V - Medium Weight

- Item 14 - Fork, picnic (white)
- Item 15 - Knife, picnic (white)
- Item 16 - Spoon, tea, picnic (white)

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: General Services Administration, Engineering Group (7FXEE), 819 Taylor St., Fort Worth, TX 76102

Type VI - Light Weight/Medium Weight

Item 17 - Fork, picnic (tan/sand/beige), 2.5g ($\pm 5\%$)

Item 18 - Knife, picnic (tan/sand/beige), 2.7g ($\pm 5\%$)

Item 19 - Spoon, tea, picnic (tan/sand/beige), 2.5g ($\pm 5\%$)

3. SALIENT CHARACTERISTICS

3.1 Material.

3.1.1 Type III items. The molding material for this type item shall be polystyrene or polypropylene. When specified, the molding material for type III items shall be produced from biodegradable material ("Government unique" requirement, see 7.3 and 7.7). Testing shall be as specified in 5.2.

3.1.2 Type IV items. The molding material for this type item shall be modified polystyrene or biodegradable material. When specified, the molding material for type IV items shall be produced from biodegradable material ("Government unique" requirement, see 7.3 and 7.7). Testing shall be as specified in 5.2.

3.1.3 Type V items. The molding material for the type V items shall be general purpose polystyrene or biodegradable material ("Government unique" requirement, see 7.3 and 7.7).

3.1.4 Type VI items. The molding material for the type VI items shall be polystyrene or polypropylene.

3.2 Design. The design for the type III, V, and VI items shall be the contractor's own and shall be such as to conform to the requirements specified herein. The design of the type IV items shall conform to the design shown on U.S. Army Natick Drawings 8-2-15, 8-2-38, 8-2-39 and 5-13-4655.

3.2.1 Knife serrations. The type III, V, and VI knives shall be serrated for a minimum length of 2-1/4 inches.

3.2.2 Length, type III items. The type III items shall conform to the requirements of table I for length.

TABLE I. Length of type III items

| Item | Length, inches |
|-----------------|-----------------|
| Fork | 6-1/8 (15.6 cm) |
| Knife | 6-1/2 (16.5 cm) |
| Spoon, tea | 5-3/4 (14.6 cm) |
| Spoon, bouillon | 5-1/2 (14.0 cm) |

Note: Tolerance shall be +3/8 inch (9.5 mm), -0.

3.2.3 Length, type V items. The type V items shall conform to the requirements of table II for length.

TABLE II - Length of type V items

| Item | Length, inches |
|------------|-----------------|
| Fork | 6-1/8 (15.6 cm) |
| Knife | 6-5/8 (16.8 cm) |
| Spoon, tea | 5-3/4 (14.6 cm) |

Note: Tolerance shall be $\pm 1/8$ inch (3.3 mm).

3.2.4 Length of Type VI items. The type VI items shall conform to the following requirements:

| Item | Length, inches |
|-------|--------------------------|
| Fork | 6 (15.2 cm), minimum |
| Knife | 6-1/2 (16.5 cm), minimum |
| Spoon | 5-5/8 (14.3 cm), minimum |

3.2.5 Flexibility (all type III items; and type IV, item 13 only).

3.2.5.1 Type III, fork, knife, and spoons. When tested as specified in 5.2.1, the items shall not break, nor deflect greater than the values indicated:

Fork ----- no more than 7/8 inch
 Knife ----- no more than 1-1/2 inches
 Spoons, tea ----- no more than 1 inch
 Spoons, bouillon --- no more than 1 inch

3.2.5.2 Type IV, item 13, spoon MRE. When tested as specified in 5.2.1.5, the spoon shall not break, nor deflect greater than 1/2 inch using a 3-1/4 inch beam length. An additional deflection test using a 4-1/4 inch beam length shall not break, nor deflect greater than 1 inch.

3.3 Heat distortion (type III and IV items only). The fork, knife, and spoons shall show no change in shape when tested as specified in 5.2.2.

3.4 Impact strength (type IV spoons). The type IV spoons shall sustain no damage when tested as specified in 5.2.3. Discoloration of the spoons due to stressing from impact shall not be considered as damage.

3.5 Odor and taste (all items). The forks, knives, and spoons shall be free from any objectionable odor at temperatures of 181 to 187 degrees F and objectionable taste at temperatures between 80 to 90 degrees F when tested as specified in 5.2.4.

3.6 Color. For type III items 5, 6, 7, and 8, the color shall be white and approximate one of the following color numbers of FED-STD-595: 27925, 27875, or 27769. For type III items 5a, 6a, and 7a, the flatware color shall be green, and approximate any of the following color numbers of FED-STD-595: 34373, 34449, 34504, or 34558. For type III items 5b, 6b, and 7b, the flatware color shall be tan/sand, and approximate any of the following color Nos.: 20450, 22563, or 23531 of FED-STD-595. For type IV, items 9 thru 12, the color shall be tan/sand not darker than color No. 13690 of FED-STD-595, unless otherwise specified (see 7.3). The color for type IV, item 13 shall be brown and approximate color No. 20122 of FED-STD-595. For type V items 14, 15, and 16, the color shall be the manufacturer's standard white. **For type VI items 17, 18, and 19, the color shall be the manufacturer's standard tan/san/beige.**

3.7 Marking for identification. The manufacturer's name or trade name or trademark readily identifiable with the manufacturer shall appear on all type III items. When specified, for type IV items, the manufacturer's trade name or trademark readily identifiable with the manufacturer shall be printed on each utensil packet or alternatively molded on the underside of the utensil handle. When specified (see 7.3) when the utensils are to be molded from a biodegradable material, a pictogram as shown in figure 1 should be molded into the utensils.

3.8 Workmanship. The flatware shall be full formed and free from any crack, chip, or flash, resulting in a sharp edge. The flatware shall also be free of any soil or embedded foreign material. Slight variations in color or swirls normal to the manufacturing process shall not be considered a defect.

3.9 Metric products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pound units, providing they fall within tolerances specified and all other requirements of this document are met. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch-pound units, a request should be made to the contracting officer to determine if the product is acceptable.

4. REGULATORY REQUIREMENTS

4.1 FDA requirements. All materials used in the manufacture of forks, knives, and spoons shall conform to Subpart B of title 21, CFR 177. Utensils made from polystyrene shall conform to Section 177.1640 of 21 CFR 177 and those made from polypropylene shall conform to Section 177.1520 of 21 CFR 177. Biodegradable materials may also be used.

4.2 Recovered materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. QUALITY ASSURANCE PROVISIONS

5.1 Product conformance. The products provided shall meet the salient characteristics of this commercial item description except for any "Government unique" requirement specified, shall conform to the producer's own drawings, specifications, standards, and quality assurance practices and be the same product that has been sold in the commercial marketplace for over two years, or is the same product that has successfully been delivered to the government on a previous contract or purchase order. The Government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

5.1.1 Market acceptability criteria. The following market acceptability criteria is necessary to document the quality of the product to be provided under this CID: The company must have sold 10,000 items meeting the requirements of this CID, except for the Government unique requirements, in the commercial or government marketplace over the past two years.

5.2 Tests.

5.2.1 Flexibility tests (all type III items; and type IV, item 13 only).

5.2.1.1 Suggested apparatus. The suggested apparatus is equivalent to a laboratory stand with a base, upright and a drill press vise attached to the

top of the upright. The base and upright should be at right angles to each other. Any suitable height gauge may be used for recording the readings before and after loading of the fork, knife or spoon.

5.2.1.2 Fork tine. Insert the handle of a finished fork into the vise jaws of the apparatus until 3 inches protrude from the jaws to the tip end of the tines. The fork shall have the concave surface facing up. Using a 1 pound weight, attach a small loop of 0.010-inch wire to the weight for applying the load. Apply the load at a point 1/4 inch from the end of each tine. The wire loop shall not fall off due to excessive deflection nor shall the tine break off under this load.

5.2.1.3 Fork. Insert the handle of a finished fork into the vise jaws of the apparatus so that 2 inches of the fork protrudes from the vise jaws to the base of the tines. The fork shall have the concave surface facing up. Using a triangular file, slightly notch the edges of the fork where the tines begin. Apply the 1-pound load smoothly to the point where the base of the tines begin. Deflection greater than that specified in 3.2.4.1 constitutes failure of this test.

5.2.1.4 Knife. Insert the handle of a finished knife into the vise jaws so that the knife protrudes 4 inches from the vise jaws to the end of the cutting end. The flat surface of the knife shall be horizontal. Using a triangular file, notch the knife blade at a point 3-1/2 inches from the vise jaws. Apply the 1-pound load and measure the deflection at the point the load is applied. Deflection greater than that specified in 3.2.4.1 constitutes failure of this test.

5.2.1.5 Spoon. At the center of a finished spoon bowl, notch the edge of the bowl with a triangular file. Insert the spoon in the vise jaws so that the distance from the vise jaw to the notches is 3-1/4 inches. The concave surface shall face up. Apply the 1 pound load and measure the deflection at the point the load is applied. Deflection greater than that specified in 3.2.4.1 constitutes failure of the test. As an additional test for the MRE spoon (item 13), testing shall be performed as previously specified above, except that the distance from the vise jaws to the notches shall be 4-1/4 inches, and the deflection measurement shall be taken between 30 and 45 seconds after the load is applied. Deflection greater than that specified in 3.2.4.2 for either test shall constitute failure of this test.

5.2.2 Heat distortion test (type III and IV). A hole shall be drilled through the handle, near the end of the fork, knife, or spoon to be tested. The fork, knife, or spoon shall be suspended from the top of a 1000 mL beaker containing enough distilled water, maintained at 181 to 187 degrees F, so that the test specimen shall be completely immersed in the distilled water, and in such a manner that no part of the specimen comes in contact with the beaker. After 15 minutes remove the test specimen from the water. Any change in shape shall be considered a test failure.

5.2.3 Impact strength test for type IV spoons.

5.2.3.1 Apparatus. The apparatus for this test shall be as shown on Natick Drawing 4-1-169. The test weight shall be 1.00 ± 0.03 pound and shall be made of metal.

5.2.3.2 Conditioning. The finished spoon shall be conditioned at 73 ± 10 F and 50 ± 4 percent relative humidity for 48 hours prior to test.

5.2.3.3 Procedure. The conditioned spoon shall be laid on the hardwood base of the stand with the convex side of the bowl facing upward. The spoon shall be secured to the base in the middle of the handle area by the spring clip as shown on Drawing 4-1-169, or by any other suitable method which provides sufficient pressure to prevent movement of the spoon during the test. The weight guide tube shall be centered over the bowl area so that the test weight strikes the highest point of the bowl. The bottom of the weight guide tube shall be approximately 1 inch above the bowl. The test weight shall be dropped onto the highest point of the bowl from a height of 12 inches. The spoon shall then be removed from the apparatus and examined to determine conformance with 3.4. Any nonconformance shall be considered a test failure.

5.2.4 Odor and taste test. A finished fork, knife, or spoon shall be immersed in distilled water at 181 to 187 degrees F for 15 minutes. At the expiration of this time, the fork, knife, or spoon shall be removed and tested for odor. The fork, knife, or spoon, as applicable, shall then be re-immersed in distilled water at 80 to 90 degrees F for 15 minutes. At the expiration of this time, the fork, knife, or spoon, as applicable, shall be removed and evaluated for taste by placing it in the mouth in simulation of actual eating operation as required in 3.5. The presence of any objectionable odor or taste shall be considered a test failure.

5.2.5 Biodegradation test. The rate and degree of biodegradation shall be tested with the ASTM D5209 and/or ASTM D5338 standard test methods which determines the rate and degree of aerobic degradation of plastic materials on exposure to activated sewage sludge inoculum (D5209) or a controlled-composting environment (D5338) under laboratory conditions. For the marine environment, modified ASTM methods of D5209 and D5338 are suggested. For the Navy needs, the biodegradation will be compared to paper in which the exposure time required for 60% biodegradation of the biodegradable plastic shall not exceed 1.5 times the exposure time required for paper under the identical test methods.

5.2.6 Toxicity test. For the marine environment, a Polytox (microbial oxygen absorption) and/or Microtox (microbial bioluminescence) test shall be used to evaluate toxicity. For land environment, the plant growth test (OECD 208) and earthworm toxicity test (OECD 207) shall be used to evaluate toxicity.

6. PACKAGING

6.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the contract or purchase order.

7. NOTES

7.1 Part Numbering. The following part identification number procedure is for government purposes and does not constitute a requirement for the contractor.

Part Numbering System for Commercial Item Description A-A-3109

Example: AA3109-35 (AA3109-35) Example - Type III, Item 5
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|      | |---- Item (5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 16)
|      | --- Type (3 - III, 4 - IV, or 5 - V)
|      | --- CID number

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7.2 Document sources.

7.2.1 Government documents.

Copies of the Code of Federal Regulations (CFR) are available from the Superintendent of Documents, US Government Printing Office, Washington, DC 20402, (Internet - <http://www.access.gpo.gov>).

Federal standards are available from the General Services Administration, Federal Supply Service Bureau, Specification Section, Suite 8100, 470 L'Enfant Plaza, SW, Washington, DC 20407.

U.S. Army Natick drawings are available from the U.S. Army Natick Research, Development and Engineering Center, ATTN: SSCNC-WEF, Natick, MA 01760-5018

7.2.2 Non-Government documents. Copies of ASTM standards are available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

7.3 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents (if applicable).

- a. Title, number and date of this commercial item description.
- b. Type and item required (see 2.1).
- c. Color required for type IV, items 9 thru 12 (if other than tan/sand) (see 3.6).
- d. When the manufacturer's name or trademark is required for type IV utensil packets (see 3.7).
- e. Preservation, packing and marking required (see 6.1).
- f. When alternative construction of handle tip for type IV items is authorized (see 7.5).
- g. When biodegradable material is required (see 3.1.1, 3.1.2, and 3.1.3).
- h. When a pictogram is required (see 3.7).

7.4 National Stock Numbers (NSN's): The following is a list of NSN's assigned which correspond to this CID. The list may not be indicative of all possible NSN's associated with the CID.

| <u>Type</u> | <u>Item</u> | <u>NSN</u> | <u>Nomenclature</u> | <u>Individually wrapped?</u> |
|-------------|-------------|------------------|---------------------|------------------------------|
| III | 4 | 7360-01-380-4695 | Flatware set | Yes |
| III | 5 | 7340-00-022-1315 | Fork | No |
| III | 5 | 7340-01-379-5524 | Fork | Yes |
| III | 5 | 7340-01-379-5660 | Fork | Yes |
| III | 6 | 7340-00-022-1316 | Knife | No |
| III | 6 | 7340-01-379-8840 | Knife | Yes |
| III | 7 | 7340-00-022-1317 | Spoon, tea | No |
| III | 7 | 7340-01-382-0538 | Spoon, tea | Yes |
| III | 8 | 7340-00-401-8041 | Spoon, soup | No |
| IV | 9 | 7340-00-170-8374 | Spoon | No |
| IV | 10 | 7340-00-205-3187 | Knife | No |
| IV | 11 | 7340-00-205-3342 | Fork | No |
| IV | 12 | 7360-00-634-4800 | Flatware set | Yes |

| | | | | |
|---|----|------------------|-------|----|
| V | 14 | 7340-01-438-7392 | Fork | No |
| V | 15 | 7340-01-438-9241 | Knife | No |
| V | 16 | 7340-01-438-7391 | Spoon | No |

7.5 Handle tip construction. The primary construction for the type IV items shown on Drawings 8-2-15, 8-2-38 and 8-2-39 provide for a blunt handle tip design. This design is required when the items are packed in Operational Rations so that the tips will not penetrate through the sealed package. The alternate construction provides a pointed handle tip design which SHOULD NOT be packed in MRE rations.

7.6 Definition of biodegradable plastic. Biodegradable plastic as defined by ASTM methods is a material that contains as an essential ingredient one or more organic polymeric substances of large molecular weight, is solid in its finished state, and, at some stage in its manufacture or processing into finished articles, can be shaped by flow. Biodegradable plastic is a material in which degradation results from the action of naturally occurring micro-organisms such as bacteria, fungus, and algae (definition, ASTM D883).

7.7 "Government unique" requirement. Whenever a "Government unique" requirement is included in a paragraph under "Salient characteristics", it is meant that the requirement is something not normally offered to the commercial marketplace by the manufacturer.

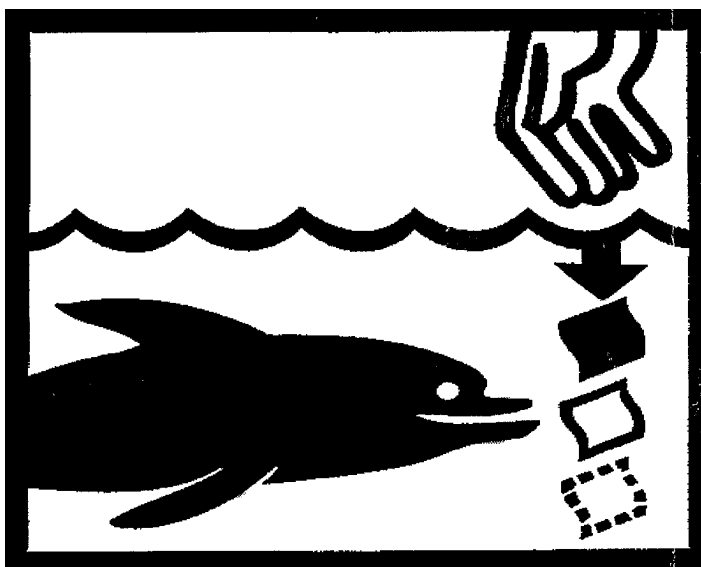


FIGURE 1 - Pictogram

MILITARY INTERESTS:

MILITARY COORDINATING ACTIVITY:

Army - GL

CIVIL AGENCY COORDINATING ACTIVITY:

VA - OSS

Custodians

Army - GL
Navy - SA
Air Force - 99

Review Activities

Army - MD, QM-1
Navy - MS, MC, CG
Air Force - 84
DLA - IS, SS

PREPARING ACTIVITY:
GSA - FSS

(DoD Project 7340-0099)

Document Changes to A-A-3109 - Fork, Knife, and Spoon (Plastic)
(includes changes from July 23, 2003)

2.1 Classification

Add "Type VI - Light Weight/Medium Weight"

Item 17 - Fork, picnic (tan/sand/beige), 2.5 g (± 5 %)
Item 18 - Knife, picnic (tan/sand/beige), 2.7 g (± 5 %)
Item 19 - Spoon, tea, picnic (tan/sand/beige), 2.5g (± 5 %)

3.1 Material

Add "3.1.4 Type VI items. The molding material for the type VI items shall be polystyrene or polypropylene."

3.2 Design. Change to read "The design for the type III, V, and VI items shall -----."

3.2.1 Knife serrations. Change to read "The type III, V, and VI knives shall -----."

Add "3.2.4 Length of type VI items. The type VI items shall conform to the following requirements:

| <u>Item</u> | <u>Length, inches</u> |
|-------------|--------------------------|
| Fork | 6 (15.2 cm), minimum |
| Knife | 6-1/2 (16.5 cm), minimum |
| Spoon | 5-5/8 (14.3 cm), minimum |

Renumber the remaining paragraphs of Section 3.2 accordingly.

Add to the end of 3.6 Color. "For type VI items 17, 18, and 19, the color shall be the manufacturer's standard tan/sand/beige."